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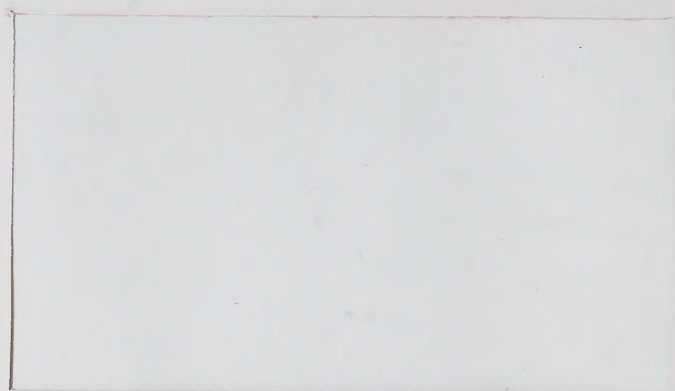
Background Paper 16

**SKILL DEVELOPMENT LEAVE FOR
POST-SECONDARY EDUCATION**

B. Ahamad

Skill Development Leave Task Force

**Background
Paper**



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SKILL DEVELOPMENT LEAVE FOR
POST-SECONDARY EDUCATION

B. Ahamad

Ahamad Consultants Ltd.

March 31, 1983

This is one in a series of background papers prepared for the Task Force on Skill Development Leave. The opinions expressed are those of the author(s) and do not necessarily reflect the views of the Task Force or the Department of Employment and Immigration.

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Executive Summary

This report tries to answer these questions
Is skill development leave for post-secondary education
useful and worthwhile? If leave programs were instituted
for post-secondary education, would there be a demand for
them? What method of financing should be considered for
such programs?

Our analysis suggests that skill development
leave is a useful mechanism for reducing some of the
manpower shortages and surpluses in the economy. It may
be particularly important during the eighties because of
the effects of changing technology and the possibility
that many workers may face technological unemployment
as the demands for their skills fall.

From a theoretical point of view skill development
leave for post-secondary education may also be used to
reduce some of the existing inequalities in Canadian
society. However, the evidence shows that most of the
older individuals who take post-secondary education have
already been exposed to some post-secondary education,
so that the effects of leave programs on equity are not
likely to be significant.

The available data suggest that there is sufficient unsatisfied demand for post-secondary education by older workers to make skill development leave programs worthwhile. The demand for part-time study, especially by older individuals, has increased dramatically and a significant proportion of graduates want to take more post-secondary education.

One of the best schemes for financing skill development leave for post-secondary education appears to be a Registered Educational Leave Plan. However, this scheme will provide substantial tax savings for wealthy individuals who have no intention of taking retraining or educational upgrading programs. A better scheme would be to provide substantial financial assistance to part-time students under the Canada Student Loans Program. Part of this assistance can be provided in the form of a grant, and employers may also be called upon to contribute by providing a proportion of the employee's salary while he is on leave.

Our conclusion is that skill development leave for post-secondary education appears to be worthwhile and necessary to meet the changing conditions of the eighties. Leave programs should be available for individuals to take specific and job-related training programs. They

should be available for part-time study, for example one day per week, and financial assistance to cover foregone earnings should be provided under a grant/loan scheme, with some part of the foregone earnings being borne by employers. Higher grants should be provided for older workers with skills associated with out-dated technology because of the greater risk that they will become technologically unemployed.

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I: Introduction

The purpose of this report is to try to answer three questions: Is skill development leave for post-secondary education useful and worthwhile? If leave programs were instituted for post-secondary education, would there be a demand for them? What method of financing should be considered for such programs?

Sections II and III of the report deal with the first question. In Section II, we look at the advantages of skill development leave for post-secondary education. Skill development leave can be used to provide post-secondary education for workers without it, so that it can help to reduce some of the existing inequalities in society. It can also be used for improving the allocation of the manpower resources in the economy, by permitting individuals to acquire new skills and upgrade existing skills, in order to take advantage of the changing demands of the economy.

The changes in the industrial structure, and its effects on the occupational structure, that have taken place over the period 1971-81 are discussed in Section III. The available evidence suggests that there are significant shortages and surpluses of different types

of manpower in the economy, and projections indicate that others will develop over the eighties. The usefulness of skill development leave to reduce some of these imbalances is discussed.

Sections IV and V of the report deal with the second question, which is concerned with the demand for post-secondary education. No statistics are available for directly estimating the effects of skill development leave on post-secondary education. But the changing pattern of enrolments provide some indirect indicators of likely changes. Data on the age distributions of university students show that full-time students are still mainly young adults, but part-time students are now older than they were ten years ago. Is part-time study used as a mechanism by older people to make up for the educational opportunities they missed earlier in their lives? Do most part-time students try to obtain further education for job-related reasons or for personal enrichment? The answers to these questions are examined in Section IV.

In Section V, we look at the labour market experience of graduates in order to shed some light on the demand for post-secondary education. Two data sources are used: the 1973 Highly Qualified Manpower

Survey which covered all university degree-holders in 1971, and the 1978 National Graduate Survey which covered all college and university graduates in 1976, excluding those in Québec. Here again the focus is on the age distributions of graduates, and we try to determine whether or not there are significant differences in specific variables, for different age-groups.

Section VI deals with the question of financing. A wide variety of financing schemes may be considered, but two are particularly relevant for post-secondary education: a Registered Educational Leave Plan suggested by the Commission of Inquiry on Educational Leave and Productivity (Adams, et. al, 1979) as being particularly suitable for highly skilled and professional manpower, and a variation of the Canada Student Loans Program which is already available for full-time post-secondary education.

Finally, in Section VII, we draw together some of the conclusions of the analysis and try to answer the questions above.

II. The Advantages of Skill Development Leave for Post-Secondary Education

There has been an unprecedented expansion in post-secondary education in Canada since the beginning of the sixties. Much of the expansion stemmed from the increase in the population aged 18 - 24, associated with the post-war baby boom. But the individual demand for post-secondary education has also increased dramatically, so that the proportion of 18 - 24 year olds proceeding to post-secondary education also rose during the sixties and seventies.

There are of course many reasons for these changes. In the early sixties, it became more widely recognized that education plays an important role in the well-being of both the individual and the society to which he belongs. From the point of view of the individual, increased education generally leads to a better job and hence to higher earnings. But there are many non-economic benefits as well. These include greater job security, better working conditions, increased job satisfaction, shorter working hours, greater social mobility, and so on. From the point of view of society as a whole, education appears to be an important determinant of economic growth and labour productivity, so that the nation will generally be better off with a more highly educated labour force, (see for example, Economic Council of Canada, 1965).

The increased interest in the benefits of post-secondary education has generated a great deal of debate about equity and efficiency in post-secondary education. A number of research studies have been designed to shed light on who pays for and who benefits from post-secondary education (see for example Mehmet, 1978), and on different levels of participation by different groups in society (see Pike, 1970). Other studies have been directed towards developing criteria for assisting individuals and governments in making educational and occupational choices, (see for example, Dodge and Stager, 1972).

Many of these studies have shown that different groups in the population are under-represented in post-secondary education, so that existing inequalities in society are often reinforced by the education system. For example, children from low-income families are less likely than those from high-income families to participate in post-secondary education, so that they will tend to have lower earnings in the future as well. Similarly females earn less than males, but female students tend to choose fields of study that are associated with traditional female occupations, so that their employment prospects are not often greatly different from those of women already in the labour force. Ethnicity and language are also related to participation in post-secondary education so that

children from certain ethnic and language groups tend to go into the same occupations as their parents and hence to earn relatively low incomes.

The public policies which have been designed to deal with equity issues such as these, have generally been aimed at improving the participation of those proceeding directly to post-secondary education from high school. For example, one of the objectives of the Canada Student Loan Program (CSLP) is to provide financial assistance to students in need so that participation will not be affected by the availability of finance. However, the loan ceiling in the program has been relatively low so that students with high expenses, for example older students with family responsibilities, may not receive adequate financial assistance under the program. Moreover, part-time students who are generally older than full-time students and who have sometimes had substantial labour market experience, are not yet eligible for a Canada Student Loan.

The recent Report of the Federal-Provincial Task Force on Student Assistance (1981) concluded that factors other than the availability of financing may be important determinants of participation in post-secondary education. These include factors such as parents' aspirations for their children, students' occupational aspirations, subject

choices made in high school, and so on. These are factors which are not easily influenced by public policy, and it is not surprising that substantial inequalities in participation in post-secondary education still exist after more than two decades of concern (see for example, Anisef et. al., 1979).

Some of these inequalities can probably be reduced by providing increased opportunities for individuals without post-secondary education, to take college or university education during their working life. There is some evidence that individuals from low-income families try to make up for missed educational opportunities through part-time study later in their life, (see Secretary of State, 1976). However, the costs, which include the earnings which have to be foregone during the period of study and the disruption of family life, may be so high that many are discouraged from doing so. Thus, there may be a strong case for the adoption of programs for skill development leave to provide a reduction in the costs of obtaining post-secondary education for those who do not already have it. Such programs could have secondary benefits since the children of the recipients of such education would then be more likely to take post-secondary education themselves.

Thus, skill development leave may provide a basis for reducing some of the social and economic inequalities in our society. But several important

questions need to be answered. How do we choose the target groups for such programs? Should language, ethnicity, region of residence, income, and existing education all be considered? And how do we ensure that the benefits go to those the programs are meant to serve and not merely to the already privileged groups in the population? How should the costs of such programs be divided between employers, governments and employees? Will the gains in equality be worth the costs of such programs?

The other main thrust in policy and research on post-secondary education over the past two decades, has been in terms of the development of criteria for decision-making concerning educational and occupational choices. There have been two main schools of thought in this area. One school holds that such decisions should be based on the future manpower requirements of the economy. The other holds that expenditures on education should be treated as investments which yield future returns to both individuals and society as a whole, so that decisions should be based on the private and public profitability of such investments.

The basic assumption of the manpower requirements approach is that there are rigidities in the labour market

and in the production process which limit the adjustments that producers can make in response to changes in technology and in the demand for goods and services. It is therefore necessary to forecast the types of manpower which will be required by the economy in the future in order to reduce manpower shortages and surpluses which may develop and limit the output of the economy. Thus, individuals should be encouraged to choose occupations for which the demand is expected to increase because of development in technology or because of increases in the demand for particular goods and services. Conversely, they should be discouraged from entering occupations for which demand is expected to decline because of out-of-date technology or because of the falling demand for some products.

There has been a great deal of controversy in the literature about the validity and usefulness of the manpower requirements approach (see, for example, Ahamad and Blaug, 1973). One of the main criticisms is that manpower forecasts have been highly inaccurate so that they may not provide a sound basis for making decisions. It is often argued that this criticism is particularly important since the lead time necessary for producing high level manpower, with skills developed in the post-secondary system, is quite long. Thus, if they are to be useful, manpower forecasts should be made a fairly long time

before the expected demands materialize. But forecasts tend to become less reliable as the time horizon increases, so that they may be least useful when they are most necessary.

Arguments such as this ignore the fact that people already in the labour force also make adjustments in occupation in response to changes in the labour market. A recent study on university graduates (Ahamad, 1983) suggests that changes in occupation are fairly frequent, and there is no reason to believe that the same is not the case for other post-secondary graduates. Thus, the occupational mobility of people already in the labour force may provide an important mechanism for reducing manpower imbalances in the economy, and there may be less need to rely only on new graduates from the educational system to reduce future manpower shortages and surpluses.

Many individuals already in the labour force can change occupation fairly easily because of the variety of skills they have acquired in the educational system and through working experience. But it is often difficult to enter some occupations without a period of formal training or retraining. It may well be the case that the period of formal training or retraining required is much shorter for people already in the labour force with

certain skills and experience, than for young people still in the educational system. Thus, the training or retraining of existing members of the labour force may have significant advantages in terms of the time required for adjusting the supply of manpower to meet the requirements of new technology or of new demands for goods and services.

The training and retraining of individuals already in the labour force may also be important in the context of the obsolescence of skills created through changes in technology and scientific advances. New technology, new knowledge resulting from scientific advances and new methods in marketing and distribution all tend to make many of the skills learned in the educational system and on-the-job, obsolete. For example, the widespread use of microchips in computing and electronics is leading to demands for new types of skills and a decline in existing skills associated with out-dated technology. Thus, individuals with existing skills may find that they are likely to become unemployed and this may have profound effects on the employment of particular groups in the population (see, for example, Menzies, 1981). If the pace of technological change were to continue, it is likely that large numbers of individuals may face periods of technological unemployment during their working life.

Skill development leave clearly provides a mechanism for helping individuals to cope with the effects of changing technology and for reducing manpower shortages and surpluses in the economy. Thus, if individuals who face technological unemployment could be encouraged to take up retraining programs to acquire new skills that are expected to be in high demand, then the individuals themselves would benefit from the new employment opportunities open to them while the economy would also benefit from the more productive use of the available manpower.

The need for retraining to maintain and develop new occupational skills, has long been recognized by members of professions such as doctors, nurses and engineers. The Report of the Commission of Inquiry on Educational Leave and Productivity (Adams, et. al., 1979) noted that: "...engineers and medical doctors who fail to continually up-date their knowledge lose one-half of their professional competence over a five-year period" (p. 112). But despite this, the Commission found that considerably less than one-half of those with professional qualifications may engage in systematic professional upgrading, (p. 113). It appears that the reasons for the low level of participation include time and money and the unavailability of courses, so that skill development leave programs may be useful in providing an incentive for upgrading.

The other school of thought relating to education and occupational choices, focuses on the benefits and costs of the additional education that an individual receives. From a conceptual point of view all benefits and costs, including economic as well as non-economic ones, should be included in the calculations. In practice, non-economic benefits and costs are not easy to quantify and measure in monetary terms so that they are often ignored.

Benefits and costs can be measured with respect to both individuals and society as a whole. From the point of view of the individual, the costs include the earnings that must be foregone during the training period, tuition fees and other expenses associated with the training, while the benefits include the higher earnings and job security associated with the new employment opportunities. Many of the private costs and benefits are included in the calculations for society as a whole but other benefits and costs, which are not relevant for an individual, such as economies of scale, must be included as well. There are many difficulties in the application of benefit-cost analysis to education and these have been subject to considerable discussion in the literature. For example, there has been much debate about how much of the extra earnings associated with any additional education can be attributed directly to that education, and how much can be attributed to other factors such as the greater ability

of individuals who take additional education, (see for example, Stager, 1981).

Despite the limitations, benefit-cost analysis in the context of skill development leave is useful since it directs attention to some of the more important considerations. For persons already employed, the earnings that have to be foregone during the training period may represent a large part of the total costs of retraining. Moreover, since earnings generally increase with age and working experience, earnings foregone during the training period will tend to be higher for older workers who are more likely to face technological unemployment. In addition, as age increases the period of working life remaining decreases so that the potential earnings benefit will fall as well. It follows that the benefit-cost ratio will tend to be lower for older working individuals than for young students or workers, so that it is not appropriate to use benefit-cost ratios derived for all individuals as a basis for making decisions about the profitability of training or retraining of older workers. Thus, the fact that benefit-cost calculations generally show that investment in post-secondary education is profitable from both a private and public point of view, cannot be used as a basis for justifying investment in post-secondary education for adult workers.

Programs for skill development leave will tend to lower the private costs of retraining and they should therefore lead to an increase in the demand for post-secondary education by adult workers. But if some of the costs of such leave are to be borne by employers, they may insist that employees provide some guarantees that they will continue to work for them until they receive a positive return on their investment. If most of the costs are to be borne by the public, then the net social returns may be even lower still, but considerations other than monetary benefits and costs may be more important in making retraining decisions.

To sum up, skill development leave may provide a useful mechanism for reducing some of the social and economic inequalities in Canadian society. It may also be important in removing some of the manpower shortages and surpluses that develop in the economy and in reducing the number of adults affected by technological unemployment or under-employment. But the costs and benefits of skill development leave programs must clearly be considered; while such programs may encourage working adults to undertake retraining, the net social returns may be low and non-monetary benefits and costs may be more important from a public policy point of view.

III: Changes in the Demand for Highly Skilled Manpower

The changes in the demand for highly skilled manpower that take place in the economy can be disaggregated into two separate components: changes in the industrial structure of employment, and changes in the occupational structure of each industry. Over the past ten years, the industrial structure of the economy has changed significantly and relatively more people are now employed in sectors that use a high proportion of highly skilled manpower. At the same time, significant advances in technology have taken place and some industries now require a higher proportion of highly skilled manpower.

The data in Table I show the changes in the industrial structure of the Canadian labour force that have taken place over the period 1971-81. The total labour force grew from 8.6 million in 1971 to 12.0 million in 1981, an increase of 39.2 per cent. Higher than average growth was recorded for fishing and trapping, mines, etc., finance, insurance and real estate, and community, personal and business services. The largest absolute increase occurred in the community, personal and business services sector, which accounted for an increase of 1.4 million persons. Thus, the increase in the labour force in this sector represented 41.0 per cent

Table I : Labour Force 15 years and over by Industry
for Canada 1971 and 1981

Industry	1971 (000)	1981 (000)	Percentage Change 1971-81
Agriculture	481.2	481.3	0.0
Forestry	74.4	100.8	35.5
Fishing and Trapping	25.4	36.9	44.9
Mines (incl. milling) quarries and oil wells	139.0	210.0	51.1
Manufacturing	1,707.3	2,219.4	30.0
Construction	538.2	752.4	39.8
Transportation, Communication and other utilities	671.1	935.6	39.4
Trade	1,269.3	1,957.6	54.2
Finance, Insurance and Real Estate	358.1	621.1	73.5
Community, Business and Personal Services	2,041.4	3,399.4	66.5
Public Administration and Defence	639.6	886.6	38.6
Industry, unspecified and undefined	681.9	404.3	-40.7
Total	8,626.9	12,005.3	39.2

Source: 1981 Census of Canada, 20 per cent Data Base,
Highlight Information, March 1, 1983,
Statistics Canada.

of the total increase in the labour force of 3.4 million persons. Since the community, business and personal services sector uses a high proportion of highly skilled manpower, the increase in the relative importance of this sector would itself have generated an increase in the demand for highly skilled manpower.

At the same time, the occupational structure of each industry has changed. The recent boom in high technology industries has led to an increased demand for scientists and engineers, computer specialists, financial and other business managers, among others. Thus, the occupational structure of the labour force has also changed considerably. The data in Table II show the changes that have taken place over the period 1971-81. The percentage increase was greatest in managerial administrative and related occupations, social sciences and related occupations, and artistic literary and related occupations: in each of these the size of the labour force more than doubled. The increase in occupations in natural sciences, engineering and mathematics (72.1%) was also impressive.

Table II : Labour Force 15 years and over by occupation
major Group for Canada 1971 and 1981

Occupation Major Group	1971 (000)	1981(000)	Percentage Change 1971- 81
Managerial, Adminis- trative, etc.	372.2	814.0	118.7
Natural Sciences, Eng. and Mathematics	234.1	403.0	72.1
Social Sciences and related	79.1	188.6	138.6
Religion	23.6	32.3	36.8
Teaching and related	349.3	489.2	40.1
Medicine and Health	326.6	519.2	59.0
Artistic, Literary, etc.	80.5	165.5	105.6
Clerical and related	1,373.6	2,190.6	59.5
Sales	815.7	1,146.3	40.5
Service	969.9	1,431.0	47.5
Farming, etc.	512.2	508.7	- 0.7
Fishing, Hunting, etc.	27.2	39.8	46.5
Forestry, Logging	67.3	81.5	21.2
Mining, etc.	59.2	75.3	27.2
Processing	334.7	472.0	41.0
Machining and related	240.9	307.1	27.5
Product Fabricating, etc.	634.4	930.3	46.7
Construction trades	568.6	769.6	35.4
Transport Equipment Oper.	338.4	457.3	35.1
Material Handling, etc.	205.8	243.1	18.1
Other Crafts and Equipment Operating	108.8	143.5	31.8
Occupations, n.e.c.	167.6	178.8	66.4
Occupation not stated	737.3	418.7	-43.2
Total	8,626.9	12,005.3	39.2

Source: 1981 Census of Canada, 20 Per Cent Data Base,
Highlight Information, March 1, 1983, Statistics
Canada.

The increases in some of the occupation sub-groups, which are not shown in the table, are also interesting. The growth in the managerial, administrative and related occupations major group was dominated by specialized administrators in finance, purchasing, personnel, and so on. For occupations in natural sciences, engineering and mathematics, the largest growth was for engineers and system analysts. In the social sciences and related major group, the greatest increases were in the social sciences, social work, law and jurisprudence and library, museum and archival sciences.

The data in Table III show how the labour force with a university degree or post-bachelor certificate (degree-holders) changed over the decade. The total number of degree-holders rose from 592.1 thousand in 1971 to 1,385.2 thousand in 1981, an increase of 133.9 per cent. Thus the relative increase in degree-holders was much higher than that for the total labour force.

Higher than average growth occurred for managerial, administrative and related occupations, mathematics, statistics and systems analysis, social sciences, social work and related, library, museum and archival sciences, artistic, literary and related,

Table III: Labour Force 15 years and over with a University Degree or Post-Bachelor Certificate by Occupation 1971 and 1981

Occupation	1971 (000)	1981 (000)	Percentage Change 1971-81
Managerial, Adminis., etc	92.3	230.9	150.2
Physical Sciences	13.3	18.5	39.1
Life Sciences	8.6	14.4	67.4
Architecture and Engineering	45.6	99.3	117.8
Mathematics, Statistics, Systems Analysis, Etc	9.5	26.7	181.1
Social Sciences	6.5	18.6	186.2
Social Work and related	9.9	28.8	190.9
Law and Jurisprudence	18.1	37.4	106.6
Library, Museum and Archival Sciences	4.5	11.0	144.4
Other Social Sciences, etc.	3.6	6.0	66.7
Religion	13.1	17.7	35.1
Teaching and related	146.8	312.6	112.9
Medicine and Health	61.1	112.5	84.1
Artistic, Literary, etc.	10.8	36.2	235.2
Clerical	40.8	97.6	139.2
Sales	30.0	77.5	158.3
Service	14.9	36.3	143.6
Other	41.4	177.5	328.7
Not Stated	21.4	25.9	21.0
Total	592.1	1,385.2	133.9

Sources: 1971 Data: Statistics Canada Catalogue 94-729, Volume III, Part 3, (Bulletin 3.3-2)
1981 Data: Preliminary Data provided by Statistics Canada.

clerical, sales, service and other occupations. The above-average increase in the last four is particularly interesting since these are occupations that are not normally associated with the possession of a university degree. It is possible that there have been significant changes in technology and that an increasing proportion of people in these occupations now require the higher skills developed through university training. But a more reasonable interpretation is that university graduates have found it increasingly difficult to find jobs in the traditional occupations and are now being forced to accept jobs for which university training is not necessary.

In 1971, nearly one-quarter of all degree-holders were employed as teachers. But demographic changes over the decade have led to a drop in enrolments and this has clearly affected the demand for teachers. Thus in 1981, the proportion of degree-holders employed as teachers had fallen slightly to 22.6 per cent from 24.8 per cent in 1971.

The difficulties that some university graduates have faced in recent years in finding suitable jobs have already received much discussion (see Clark and Zsigmond, 1981). In a report on the employment of post-secondary graduates, two years after graduation, the authors found

that graduates in fields of study oriented towards specific occupations were less likely to be unemployed or under-employed and they tended to earn higher salaries. They also found that about one-third of university graduates were in occupations which received least favourable assessments, such as clerical, sales and other low-paid occupations. More than one-third of university graduates felt that they were under-employed and one-quarter felt that their field of study was a poor choice.

There has been considerable debate about how these findings should be interpreted. Some argue that university graduates are still relatively better off than non-university graduates and that new graduates in general fields should be encouraged to think about their long-term prospects rather than about their immediate employment prospects, (see Selleck, 1980). Certainly the experience of university graduates shows that they are indeed highly flexible in terms of the occupations they can perform, since they display a high degree of occupational mobility in the labour market, (Ahamad, 1983).

However, there is a great deal of evidence that these labour market adjustments are not sufficient to remove imbalances that exist in the labour market. For example, the recent Parliamentary Committee on Employment Opportunities in the '80s (1981) found that there are

shortages in certain skilled trades and professions and surpluses in others. One way of trying to reduce such manpower imbalances is to forecast the manpower requirements of the economy and encourage students to move into fields of study associated with occupations which are expected to be in high demand. But such an approach has not been successful (see Ahamad and Blaug, 1973) partly because it is very difficult to forecast the effects of changes in technology. To be successful it is necessary to forecast changes in technology some time before their effects are felt since students make their educational choices some years before they join the labour market. But this is difficult to do because as experience in recent years shows, changes in technology occur at varying speeds and all of their effects are not often anticipated.

Projections of the future industrial structure of the economy suggest that the contribution of the service industries to total employment will be considerably lower over the eighties than it has been over the recent past (see Employment and Immigration, 1981). Since university graduates are highly concentrated in service industries, this implies that it will become even more difficult for university graduates to find jobs in their preferred occupations. Thus, it appears likely that university graduates will not find it easy to obtain jobs in teaching,

health care and other services which depend on the demands generated by population growth and demographic change.

At the same time, changes in technology can be expected to have more profound effects than they already have had. The flood of technological advances that have altered the telecommunications and electronic industries are now starting to affect virtually every industry. Many people talk about changes that will revolutionize the way we work (the office of the future and the electronic cottage). In these circumstances, it seems reasonable to assume that the skills learned during the formal educational process before most individuals join the labour market, will no longer be sufficient to guarantee a job for a lifetime or even for many years after joining the labour market.

These changes in the industrial structure and in technology will also affect different groups in the population in different ways. In 1971, 52.7 per cent of female degree-holders were in teaching and health occupations, and the proportion fell to 45.9 per cent in 1981. For males, the figures were 29.3 per cent in 1971 and 23.3 per cent in 1981. Thus, the projected decline in the relative importance of employment in service industries will affect female degree-holders more than male degree-holders. Changes in technology have generated

large increases in the demand for managers, engineers and computer specialists. Data from the 1981 census show that female degree-holders have made significant inroads in these occupations, but they are still dominated by male degree-holders.

Skill development leave clearly provides a useful mechanism for reducing some of the current and future imbalances in the labour market. As noted above, the high occupational mobility of university graduates shows that many adjustments are already taking place in the market. However, university education is fairly general and the adjustment process can probably be improved by providing leave programs for developing specific and job-related skills.

There is a great deal of evidence that considerable manpower shortages and surpluses still exist in the economy (see, Employment and Immigration, 1981; Economic Council of Canada, 1982; Parliamentary Committee for Employment Opportunities for the '80s, 1982). Thus, it appears clear that skill development leave can make a significant contribution to the economy by encouraging workers to take the training and educational upgrading necessary to allow them to move to occupations in high demand. It is also likely that the importance of such

a mechanism for adjustment will increase as the effects of technological change begin to be felt in all sectors in the eighties.

IV: Skill Development Leave and the Demand for Post-Secondary Education

Economic theory assumes that the demand for any good or service depends on its price, and that if other things remain the same, the quantity demanded will usually rise as the price falls. Skill development leave involves an effective reduction in the price of obtaining more education, so that the introduction of such a leave program would be expected to increase the demand for post-secondary education. In theory, it would be fairly easy to estimate the effects of skill development leave programs if we knew the price-elasticity of the demand for post-secondary education and if we could reasonably estimate the effective price reduction caused by a particular program.

In practice, it is almost impossible to follow such a simple approach. It is likely that the price-elasticity of demand for post-secondary education varies considerably for different groups in the population because of differences in attitude, motivation, risk-taking and so on. For example, demand is probably much less elastic for older persons than for younger persons. Individuals lose some of their natural abilities as they age, and it becomes more difficult to learn new skills. For some, the physical energy required to undertake a new learning activity is far too great. In the context of acquiring new skills to

be used in the labour market, older workers are often discouraged because of the lack of guarantees that exist for future earnings.

There are also a range of other factors that limit the direct application of the price-quantity relationship assumed in the economic theory. Demand is also affected by factors such as the availability of courses of study at times and places convenient to working people, the provision of counselling and assistance to older people, the relaxation of admission criteria, the granting of credit for working experience and demonstrated skills, and so on, (see Adams, et. al. 1979). Moreover, there are few available statistics on the educational experience of adults, and we know very little about how many people are involved, what their reasons are for taking post-secondary education, what benefits they receive from the additional education they take, and so on. Thus, there is very little data available for directly assessing the effects of skill development leave programs on the demand for post-secondary education.

We can, however, use the available statistics on post-secondary education to get some clues about how skill development leave programs may affect the demand for post-secondary education. The dramatic changes in

post-secondary education that have taken place in Canada since the sixties have already received a great deal of attention, (see, for example, Statistics Canada, 1978). In 1961, total full-time enrolments in post-secondary institutions stood at 182,000; by 1971, this figure had risen to 497,000, and by 1981, it had reached 675,000. The enormous expansion of enrolments has had a significant impact on the level of education attained by the population in Canada. Census data show that the proportion of the population aged 15 years and over, with some post-secondary education, increased from 11.9 per cent in 1961 to 20.0 per cent in 1971 and to 35.6 per cent in 1981.

Although the rate of increase in the non-university sector has been higher than in the university sector, full-time university enrolments still represent about 60 per cent of all full-time post-secondary enrolments. Part of the increase is associated with the increase in the population aged 18 - 24 (which has traditionally been regarded as the source population) resulting from the post-war baby boom. But the proportion of this age-group proceeding to university (the enrolment rate) has also increased. Thus, the demand for full-time university study has also increased considerably over the period.

The data in Table IV show the age distribution of full-time university undergraduates by sex in 1971 and 1980. Both male and female full-time undergraduates tend to be young and while the distribution for males has remained almost the same over the nine year period, the distribution for females has shifted upwards slightly. Thus, the modal (typical) age for males in 1971 was 20 and it was still the same in 1980; for females it was 19 in 1971 and it rose to 20 in 1980.

Thus, full-time undergraduate study still appears to be dominated by young adults, which suggests that working adults are not attracted to full-time undergraduate programs.

Table IV: Age Distributions (%) for full-time undergraduates

<u>Age-Group</u>	<u>Male</u>		<u>Female</u>	
	1971	1980	1971	1980
- 24	86.6	86.4	91.6	87.5
25 - 29	10.2	10.1	4.3	7.1
30 - 34	1.9	2.4	1.7	2.7
35 - 39	0.8	0.6	1.0	1.4
40 - 44	0.3 ¹	0.2	0.7 ¹	0.7
45 - 49	0.5 ²	0.1	0.3 ²	0.4
50 -	0.1 ³	0.2	0.5 ³	0.2

Source: Data obtained from Statistics Canada

Notes 1: Ages 40 - 45
 2: Ages 46 - 50
 3: Ages 51

Similar data for full-time graduate students are shown in Table V. In this case, there has been a marked shift in the distributions, and both male and female full-time graduate students are older in 1980 than those in 1971. The modal age rose from 24 in 1971 to 25 in 1980 for males, and from 23 in 1971 to 24 in 1980 for females. The proportion of persons in the age range 30 - 39 rose from 19.9 per cent in 1971 to 27.4 per cent in 1980 for males, and from 18.1 per cent in 1971 to 25.8 per cent in 1980 for females.

Table V: Age Distributions (%) for full-time Graduate Students

<u>Age-Group</u>	<u>Male</u>		<u>Female</u>	
	1971	1980	1971	1980
- 24	31.6	23.9	40.9	28.2
25 - 29	44.3	44.7	30.9	37.7
30 - 34	14.9	20.6	11.8	17.3
35 - 39	5.0	6.8	6.3	8.5
40 - 44	2.5 ¹	2.3	5.6 ¹	4.2
45 - 49	0.8 ²	0.9	2.5 ²	2.1
50 -	0.9 ³	0.8	2.0 ³	2.0

Source: Data provided by Statistics Canada

Notes: 1: Ages 40 - 45
 2: Ages 46 - 50
 3: Ages 51 -

The increase in the proportion of older full-time graduate students may be due to many factors. For example, it may be that students are now spending longer periods in obtaining their degrees, or that there has been a relative increase in the proportion of persons taking degrees with longer training periods. But it may also indicate that more older individuals are willing to take graduate degrees on a full-time basis.

Enrolments in part-time university programs have grown more dramatically than full-time enrolments. At the undergraduate level, part-time enrolments grew from roughly 142,000 in 1970 to about 213,000 in 1980; at the graduate level, they grew from 14,400 in 1970 to 32,100 in 1980. In 1970, part-time enrolments represented 34.0 per cent of total undergraduate enrolments; in 1980, the figure had increased to 38.7 per cent. For graduate students, the proportion of part-time enrolments rose from 29.9 per cent in 1970 to 41.8 per cent in 1980.

The age distributions of part-time undergraduates are shown by sex for 1971 and 1980 in Table VI. Part-time students are generally older than full-time students; for example, in 1980, 46.5 per cent of part-time male undergraduates but only 3.5 per cent of their full-time counterparts were over 29 years old.

Table VI : Age Distributions (%) for part-time Undergraduates

<u>Age-Group</u>	<u>Male</u>		<u>Female</u>	
	1971	1980	1971	1980
- 24	26.8	26.5	30.1	22.6
25 - 29	33.8	27.0	25.0	21.2
30 - 34	17.4	21.6	14.9	20.2
35 - 39	9.6	12.1	10.7	15.3
40 - 44	6.9 ¹	5.9	9.2 ¹	9.0
45 - 49	3.1 ²	3.2	5.1 ²	5.5
50 -	2.4 ³	3.7	5.0 ³	6.2

Source: Data obtained from Statistics Canada

Notes: 1: Ages 40 - 45

2: Ages 46 - 50

3: Ages 51 -

Part-time undergraduate students in 1980 were also older than those in 1971. In 1971, 27.0 per cent of males and 25.6 per cent of females were aged 30 - 39; in 1980, the figures had risen to 33.7 per cent for males and to 35.7 per cent for females. For males, the modal age actually decreased from 25 in 1971 to 23 in 1980 while that for females decreased from 24 in 1971 to 23 in 1980. Thus, the peak of the distribution fell as the proportion in older age-groups increased, so that the distribution has become less peaked.

These data show that part-time undergraduate study has become an important mechanism for older people to take post-secondary programs.

The data in Table VII for part-time graduate students show a similar pattern. In 1971, males aged 30 - 39 represented 33.4 per cent of all part-time graduate students; in 1980, the proportion had increased to 47.5 per cent. For females, the figures were 36.3 per cent in 1971 and 41.9 per cent in 1980. The modal age for males in 1971 was 28 and it was still the same in 1980. For females it rose from 26 to 27 over the period.

Table VII: Age Distributions (%) for Part-time Graduate Students

<u>Age-Group</u>	Male		Female	
	1971	1980	1971	1980
- 24	16.1	7.1	21.3	11.2
25 - 29	37.7	32.3	30.0	30.0
30 - 34	22.2	31.3	14.8	25.8
35 - 39	11.2	16.2	11.5	16.1
40 - 44	10.7 ¹	7.2	16.0 ¹	8.9
45 - 49	1.4 ²	3.4	4.2 ²	5.5
50 -	0.7 ³	2.5	2.2 ³	2.5

Source: Data obtained from Statistics Canada

Notes: 1: Ages 40 - 45
 2: Ages 46 - 50
 3: Ages 51 -

Thus the data for part-time graduate students confirm the view that more older persons are now involved in part-time university study than ten years ago.

In the context of skill development leave, two main questions arise from this analysis of the age distributions of part-time students. Does part-time study constitute an important attempt by disadvantaged groups in the population to make up for the educational opportunities they missed earlier in their lives? Is part-time study used as a basis for upgrading skills in order to provide better career opportunities, or merely because of the personal interest of the individuals concerned?

Data from the Post-Secondary Student Survey 1974-75, carried out by Statistics Canada, show that the socio-economic background of part-time students is somewhat lower than that of full-time students, (see Secretary of State, 1976). This suggests that children whose parents had little formal education and low incomes, may try to make up through part-time study for the educational opportunities they have missed. However, two other studies show that part-time students have generally taken some post-secondary education before they undertake part-time study, (see Waniewicz, 1976 and Humphreys and Porter, 1978). Humphreys and Porter found,

for example, that 51 per cent of the part-time students at Carleton University, Ottawa, in 1977-78 had gone directly to university from high school, and 57 per cent had, at some time, been enrolled at university on a full-time basis. Thus, they conclude that although, "...the present system of part-time studies is thought by many to offer a "second chance" to individuals who are educationally and socially deprived, the existing arrangements are used mainly by individuals who had a "first chance" but who for some reason did not take advantage of it, or by those individuals who took their first chance and now want even greater benefits", (Humphreys and Porter, 1978, p. 128). These different results would be consistent with each other if students with a low socio-economic background were more likely to "drop-out" or "stop-out" from full-time study and then make up for this through part-time study later in their lives.

On the basis of this evidence, it seems likely that skill development leave programs designed to encourage post-secondary training or retraining, may be used most by individuals who already have some post-secondary education. Thus, if the intention is to provide opportunities for people who have never been exposed to post-secondary education, additional steps will need to be taken to encourage participation.

The second question is more difficult to answer. In the Humphreys and Porter Survey, a minority of part-time students reported that they had enrolled in a program of study for job-related reasons. In the Waniewicz Survey: "... more than 50 per cent of the reasons given refer to practical needs related to needs in employment, economic opportunities, job and social promotion, etc." (Waniewicz, 1976, p. 83). Part of the difference may be a matter of interpretation, but some difference is probably due to the fact that the Waniewicz Survey dealt with students in all types of institutions, while the Humphreys and Porter Study dealt only with university students. Thus, it appears reasonable to assume that part-time university students are more likely than other part-time students to be more concerned with personal enrichment than career prospects.

However, both surveys suggest that individuals from professional, managerial and other highly skilled occupations are disproportionately represented in the population of part-time students. Thus, people from these occupational groups are probably much more aware of the career opportunities that may be open to them after further education and training, and they appear to be more willing to take advantage of these opportunities.

Table VIII: Field of Study for Part-Time Undergraduates (%)

<u>Field</u>	<u>Male</u>		<u>Female</u>	
	1970	1980	1970	1980
Arts and Science	39.9	31.9	52.2	36.2
Commerce and Business Admin.	11.8	19.6	1.5	9.1
Education	9.2	11.0	19.1	17.3
Engineering	1.1	3.8	0.0	0.2
Health	0.1	0.5	1.6	3.0
Other	37.9	33.6	25.6	34.2
Total	100.0	100.0	100.0	100.0

Sources: Education in Canada, Statistics Canada, Catalogue 81-229, Annual.

It is also interesting to look at the changes that have taken place in the fields of study of part-time students. The data in Table VIII show the distribution by field of study for part-time undergraduate students in 1970 and 1980. The "other" category includes a number of courses that can be classified with more than one of the main categories shown, so that it is fairly large, but not very meaningful for analysis.

Arts and Science are the most popular programs for both males and females. However, their importance has declined over the ten-year period, and more students are now opting for job-oriented fields of study. This is

particularly true for commerce and business administration, and the growing importance of this field is probably directly attributable to the increased job opportunities available for business-related graduates. Education fields have also been popular for part-time study, especially for women, and this is probably due to historical changes in the degree requirements for teachers and the need for upgrading to maintain teaching positions and salaries. However, the relative importance of teaching fields has declined for women, and this is probably a reflection of declining employment opportunities for teachers associated with demographic changes, (see, for example, Zsigmond, et. al., 1978).

At the graduate level (Table IX) education, humanities and social sciences are the most important fields chosen by part-time students. The relative importance of the humanities has declined for both men and women over the ten-year period, and this is probably a reflection of the declining job prospects for such graduates (see Clark and Zsigmond, 1981). By contrast, the relative importance of the social sciences increased for both males and females; education fields also increased in relative importance for females.

Table IX: Field of Study for Part-time Graduate Students (%)

<u>Fields</u>	<u>Male</u>		<u>Female</u>	
	1970	1980	1970	1980
Agriculture and Biological Science	2.9	2.3	2.9	1.9
Education	25.0	24.3	31.3	40.4
Engineering	11.1	11.5	0.4	1.4
Fine and Applied Arts	0.5	0.8	2.1	1.8
Health	1.8	1.7	2.3	3.7
Humanities	17.1	8.9	32.5	15.4
Math. and Physical Science	4.9	5.3	1.8	1.5
Social Science ¹	33.1	39.6	20.5	28.4
Other	3.7	5.6	6.2	5.5
Total	100.0	100.0	100.0	100.0

Source: Education in Canada, Statistics Canada, Catalogue 81-229, Annual.

Note: 1: Includes Commerce and Business Admin.

To sum up, the patterns of demand for post-secondary education have changed dramatically over the past two decades. Full-time students are still mainly young adults who proceed to post-secondary education directly from high school. But part-time enrollments in universities have increased considerably, and although part-time students have always been somewhat older than their full-time counterparts, more older people are now enrolling in part-time study. Women and individuals who have already taken some post-secondary education are over represented in the part-time population, and there has been a shift towards more job-oriented fields of study. Thus, although many individuals

take part-time courses for personal enrichment or cultural development, a significant proportion appear to do so because of job prospects and career advancement.

Taken together, the evidence suggests that the introduction of skill development leave programs for post-secondary education would probably lead to an increase in demand for post-secondary education. However, such programs would seem to be more effective in bringing about a better balance between the demand and supply of particular types of manpower than in reducing some of the inequalities that exist in the Canadian work force.

V: Skill Development Leave and the Experience of Graduates

One of the best ways to estimate the demand for skill development leave for post-secondary education, is to analyze the labour market experience of workers with different levels of education. Individuals go through the formal educational system and develop certain skills and capabilities which affect the occupational opportunities open to them. They join the labour force and some are lucky to find an occupation with which they are satisfied and which is related to their education and skills. Others are not so lucky and they may have to change occupation frequently before they find one that satisfies them; or they may find themselves in an occupation for which the demand is declining, and they may be forced to change occupation to keep a job. Others may find that their career prospects are poor and they may see the need for further education or training to provide new employment opportunities. Added to all of this, is the fact that individuals tend to develop new skills and to sharpen existing skills through their working experience, so that their employment opportunities later in life depend to some extent on their previous experience.

Unfortunately, there are only limited statistics on the labour market experience of the work force, so that we cannot examine many of the changes described above and their effects on the demand for skill development leave. The 1973 Highly Qualified Manpower Survey which was carried out by Statistics Canada, was designed to provide data on the occupations of university degree-holders at different points in their lives and on the major field of study of the degrees they held. The main findings of the survey data have already been described (see Ahamad, et. al. 1979) and some of them are relevant to a discussion of skill development leave. The data show that degree-holders generally worked in a range of occupations and there appear to be only a few occupations, such as doctors, dentists and some engineering occupations, in which a degree in a particular field of study is a requirement for entry to the given occupation. This suggests that degree-holders are highly flexible in terms of the occupations that they can perform, and because of the learning process they have been through, they can adapt their skills to suit a variety of requirements. This finding is confirmed by data on the occupations that individuals held at different times in their lives; the data show that occupational mobility was high and that 45 per cent of degree-holders had changed occupation in the period 1971-73. (A recent report, Ahamad, 1983

suggests that this figure may be over-estimated because of errors in classification, but the true figure will still be quite high after allowing for such errors).

The data also show that occupational mobility appears to be related to factors such as age, sex, field of study, occupation, province of residence and level of degree. For example, mobility was lowest for individuals with fields of study that are closely associated with specific occupations, such as health occupations, and highest for individuals with fairly general fields of study, such as the humanities. Individuals in occupations such as clerical, sales, service and other occupations which are not normally associated with the possession of a degree, were more likely to change occupation than those in occupations with a high proportion of degree-holders.

Individuals who had taken some additional degree or certificate in the period 1971 to 1973 were also more likely to change occupation than those who had not. Thus, 52.4 per cent of those with some educational upgrading had changed occupation while only 31.1 per cent of those whose education had remained the same, had changed occupation.

Table X: Distribution (%) of Age at First Degree for
Persons with degrees in 1971, by Sex

Age at First Degree	Male	Female
- 24	67.1	78.6
25 - 29	23.0	9.2
30 - 34	6.3	3.9
35 -	3.6	8.2
Total	100.0	100.0

Source: 1973 Highly Qualified Manpower Survey,
Statistics Canada.

The data in Table X show the age at which degree-holders in the 1973 Highly Qualified Manpower Survey (that is, those who reported a degree in the 1971 Census) obtained their first degree. As is to be expected, most females take their first degree by age 25, and a much lower proportion of females than males (13.1% compared to 29.3%) do so in the age-range 25-34 when many women are tied up with the responsibility of young children.

The difference in the distribution for males and females has narrowed in recent years. For example, for those born in the period 1940-44, (i.e. aged roughly 31 and under at census time) 25.9 per cent of males and 16.0 per cent of females were aged 25-29 when they obtained their first degree, (see Table XI).

Table XI: Distribution (%) of Age at first Degree for
Persons born in the period 1940-44

Age at First Degree	Male	Female
- 24	72.6	82.9
25 - 29	25.9	16.0
30 - 34	1.4	1.1
35 -	0.0	0.0
Total	100.0	100.0

Source: 1973 Highly Qualified Manpower Survey,
Statistics Canada

It is also interesting to look at the distribution of age at first degree for individuals born at different times. This is shown for males on Table XII. Although the data are not strictly accurate for this purpose since only the survivors in 1971 are included, they do show some interesting patterns. Thus, age at first degree tends to rise for older cohorts.

Table XII: Distribution (%) of Age at First Degree for
Males born in different periods

Age at First Degree	Year of Birth				
	1945-60	1940-44	1935-39	1925-34	-1924
- 24	94.6	72.6	61.2	60.1	49.0
25 - 29	5.4	25.9	26.9	25.1	31.4
30 - 34	0.0	1.4	11.2	8.4	10.7
35	0.0	0.0	0.7	6.4	8.9
Total	100.0	100.0	100.0	100.0	100.0

Source: 1973 Highly Qualified Manpower Survey,
Statistics Canada.

For example, 72.6 per cent of those born in the period 1940-44, who would all have been over 24 in 1971, took their first degree before age 25. For those born in the period 1925-34, the proportion who took their first degree by age 25 was 60.1 per cent.

There are clearly a number of factors that complicate the interpretation of these data, for example the effects of the last World War and of the Great Depression. However, the data do support the view that there is a significant demand for university education by older people.

Data on the labour force experience of graduates are also available from the National Graduate Survey which was carried out by Statistics Canada in 1978. The survey covered college and university graduates from 1976 with the exception of those who graduated in Québec. The results of the survey have been described in Job Market Reality for Post-secondary Graduates (Clark and Zsigmond, 1981) and they tend to confirm some of the commonly held views about the changing labour market conditions for college and university graduates.

Graduates in job-oriented fields of study such as engineering, teacher training, health and business

tended to be better off than those in general fields of study. Thus, their unemployment rates tended to be lower, they were likely to earn higher salaries, they were more satisfied with their post-secondary training and with their jobs, and they were less likely to consider themselves to be under-employed, than graduates in general fields.

These data can also be used to provide some insights for skill development leave. But since they only cover labour market experience in the two years after graduation, their usefulness is somewhat limited.

The data in Table XIII show how the proportion of persons who reported that they took their particular program for career or educational objectives, varied with age. The figures are shown separately for graduates with a bachelor's or first professional degree, and for community college graduates. For college graduates,

Table XIII: Proportion (%) who took education for career objectives, by age

Age Group	Bachelor's or First	
	Professional Degree	Community College
- 24	67.1	91.6
25 - 29	74.9	87.9
30 - 34	76.7	87.9
35 - 39	69.6	89.3
40 - 44	75.5	89.2
45 -	66.7	79.3

Source: 1978 National Graduate Survey, Statistics Canada.

the proportion who chose their education for career reasons is high at all ages, while for those with bachelor's degrees the proportion for persons under 25 and 45 and over are lower than that for those of other ages. Thus, career objectives appear to be slightly more important for those in the main working ages, 25 - 44, for university students.

Table XIV: Proportion (%) who reported that they used their educational skills in their job, by age

Age Group	Bachelor's or first	
	Professional Degree	Community College
- 24	59.9	65.0
25 - 29	63.1	62.9
30 - 34	69.6	66.9
35 - 39	68.2	67.2
40 - 44	76.9	67.1
45 -	74.0	62.7

Source: 1978 National Graduate Survey, Statistics Canada.

Graduates were also asked to report on whether or not they used the skills acquired in the educational program leading to their qualification. As can be seen from the figures in Table XIV, the proportion reporting that they used these skills was higher for bachelor's degree holders than for college graduates at all ages except those under 25. This is somewhat surprising since college programs are more job-oriented than university programs. For university graduates, there appears to be a tendency for the proportion to increase with age, although this is not consistent for all age groups.

The proportion who reported that they were satisfied or very satisfied with their job is shown for different age groups in Table XV. Here again the proportion is very large for both types of graduates,

Table XV: Proportion (%) satisfied or very satisfied with their job, by age.

Age Group	Bachelor's or First	
	Professional Degree	Community College
-24	83.7	86.6
25 - 29	84.7	83.6
30 - 34	88.9	80.9
35 - 39	89.8	84.9
40 - 44	92.4	81.1
45 -	85.2	89.8

Source: 1978 National Graduate Survey, Statistics Canada.

and the variation by age is not as large as might have been expected. Clark and Zsigmond (1981) report that although a very high proportion of graduates reported that they were satisfied or very satisfied with their job, a substantially lower proportion was satisfied with the income they earned from their job.

Given the importance of career objectives in choice of educational program and the relatively low proportion of graduates who reported that they used their educational skills in their job, it is not surprising that a relatively low proportion stated that they would have chosen the same educational program, (Table XVI). Here again those aged 24 or less were less likely than those in other age groups, to choose the same educational program, but there appears to be no consistent pattern by age.

Table XVI: Proportion (%) who would choose same Educational program, by age

Age Group	Bachelor's or First	
	Professional Degree	Community College
- 24	66.7	69.9
25 - 29	71.1	70.2
30 - 34	74.6	70.3
35 - 39	73.4	70.3
40 - 44	76.4	77.0
45 -	73.9	77.0

Source: 1978 National Graduate Survey, Statistics Canada.

Finally, we looked at their plans to take further post-secondary education within two years of the survey. The data in Table XVII show that a higher proportion of bachelor's degree holders than college graduates planned to enroll in a Canadian post-secondary institution within two years. Although the proportion tends to be lower for those 40 and over than that for those under 40, the proportion does not vary substantially by age.

Table XVII: Proportion (%) who planned to enroll in a Canadian Post-secondary institution, by age

Age Group	Bachelor's and First	
	Professional Degree	Community College
- 24	54.9	38.9
25 - 29	54.2	43.9
30 - 34	53.1	43.2
35 - 39	55.2	41.8
40 - 44	48.9	39.6
45 -	42.2	36.1

Source: 1978, National Graduate Survey, Statistics Canada

To sum up, the data from the 1978 National Graduate Survey show that career objectives were important in determining choice of educational program, that a relatively low proportion of graduates used their educational skills in their job, that a relatively low proportion would choose the same educational program if they had a second chance, and that a significant proportion planned to take further post-secondary education. There was some variation by age for some of these variables, but the variation was not as large and consistent as expected.

This may be because the survey only covered the period two years after graduation so that the working experience of those in the survey was fairly limited.

- It appears clear from the evidence presented in this section that there is significant demand for post-secondary education by older individuals. Part of the demand appears to be for personal enrichment and cultural development, but a substantial proportion of graduates appear to take more post-secondary education for job-related reasons and for career advancement.

VI: Some implications of various schemes for financing
Skill Development Leave

Questions of cost and finance have formed a central part of the debate about post-secondary education that has taken place over the past two decades. Today, there is still a great deal of controversy about how the costs of post-secondary education should be divided between individuals and governments, and about what financial schemes should be instituted to ensure that the availability of adequate finance does not prevent suitably qualified students from taking post-secondary education. Currently, governments (provincial and federal) bear the bulk of the costs of post-secondary education, and needy students can generally obtain a combination of grants and loans to cover their expenses.

Some of the same questions are relevant in discussions of skill development leave for post-secondary education. Should individuals bear the full cost of such leave or should the costs be divided between employers, employees and governments? Should public subsidies be provided by means of direct grants, low-cost loans or tax rebates? What impact will different schemes for financing skill development leave have on the demand for post-secondary education?

The Commission of Inquiry on Educational Leave and Productivity (Adams, et. al. 1979) recommended that a Registered Educational Leave Plan modelled on the existing Registered Home Ownership Savings Plan and Registered Retirement Savings Plan should be instituted. The Commission recommended that individuals be permitted to deposit \$2,500.00 each year into such a leave plan, and that they pay no income tax on it in the year that it is deposited. In addition, no tax would be payable on the interest earned or on the capital when it is withdrawn to be used for financing educational upgrading or retraining.

The Commission found a great deal of support for such a scheme from employer and worker organizations and from educators. However, they recognize that such a scheme would have little value if employers refused to grant leave for education or training.

A Registered Education Leave Plan would clearly benefit individuals with already high incomes because of the higher tax savings and because they are more likely to have the funds available to do so. Thus, it follows that it would be more beneficial to professionals and other highly skilled individuals who want to undertake some retraining or upgrading. But it would also provide significant benefits to individuals with high incomes who simply want to take advantage of

the tax reduction but have no intention of taking further education or training. If all individuals with high incomes were to invest in such a scheme the loss in tax revenue would be enormous and it is not clear that the public benefits would exceed the public costs. Thus, if a Registered Education Leave Plan were introduced some rules would have to be designed to ensure that the benefits of the plan only go to those who do take education and retraining programs. The procedure of taxing individuals when they cash in their plan would still provide significant benefits to others particularly if plans could be terminated after retirement. An alternative would be to design a procedure for the tax due on the plan to be accumulated as a charge against the plan, and this would become payable if the proceeds were not used for educational or skill development leave. But this may be administratively difficult.

Several other questions need to be answered before such a plan can be instituted. What should the maximum size of the plan be? Should individuals be required to cash in their plans by a certain age? Should all education and training expenditure count as a valid charge against the plan or should it be restricted to skill development programs directed towards employment?

Another type of financing scheme that can be used for skill development leave is to provide low-cost loans or grants to individuals who want to take such leave. At present, post-secondary students may apply for financial assistance to the provincial or territorial government, and based on assessed financial need, they may receive assistance in the form of a grant or bursary, or as an authorization for a guaranteed loan with a financial institution, or some combination of repayable and non-repayable aid. The form of financial assistance varies from one province to the other, but all of the programs are generally geared to young adults. The recent Federal-Provincial Task Force on Student Assistance (1981) concluded that unmet need, that is the difference between assessed financial need and aid, is greatest for married students including single parents. This is because such students face higher costs for food, housing and clothing associated with their dependents, and there is a ceiling on the financial aid that they can receive under the various programs. Since these costs increase with age, it follows that the existing aid packages are of little use in encouraging participation in skill development leave programs.

Moreover, a simple increase in aid ceilings will not likely be sufficient to generate a significant

increase in participation in leave programs. If most of the financial need of older workers is provided through loans, then the debt burden to participants may become too high especially since the repayment period will necessarily be shorter than that for younger workers. Thus, for such a scheme to be effective in increasing participation, a significant part of the aid should take the form of a grant on a forgivable loan.

The Federal-Provincial Task Force on Student Assistance (1981) also looked at the advantages and disadvantages of a variety of such schemes in the context of assistance to all post-secondary students. The report notes that an all-grant aid plan has the advantage that it eliminates the debt load to participants, so that it is particularly attractive for adults. However, the cost is clearly high and this would be particularly so if adult workers were to receive a substantial proportion of the income foregone during the training period. The report also discusses an income contingent repayment plan in which loans are advanced to participants and repayment is linked to income after completion of the period of training or retraining. The main advantage of this approach is that the bulk of the costs are borne by those who benefit most from the additional training. However, some argue that the scheme will do little to promote

equality of opportunity since individuals from low-income groups are more likely to be reluctant to incur the additional debt.

There are many other schemes that have been proposed to deal with financing student costs of post-secondary education, such as voucher schemes and an educational opportunity bank, and these have received much public debate in Canada and in the U.S. Most of the discussion has been in terms of post-secondary education for full-time students who proceed directly to post-secondary education from high school, but there has been some analysis of the schemes as they apply to adults and continuing education, (see Mushkin, 1973). However, even after considerable debate and analysis, opinions still vary about the effects of the various schemes and it is not easy to arrive at a simple and acceptable recommendation. It would seem therefore that it is unlikely that one of these schemes applied to full-time skill development leave can win much public acceptance.

Our analysis shows that the number of part-time students in post-secondary education has increased considerably over the past decade, and it appears likely that the demand will continue to increase in the future.

Older workers prefer part-time to full-time study probably mainly because of the relative costs. But it is probably also likely that they find it easier to cope with the mental demands of one or two courses rather than five or six, especially if they have been out of the educational system for some years. Thus, it would seem to make sense that attention should be focussed on encouraging increased participation in part-time study as a means of coping with current demands for skill development leave.

One simple mechanism for doing so would be to use the Canada Student Loans Program to provide assistance for part-time students. The Secretary of State has recently announced that this will in fact be done in the near future, but it appears that assistance will be limited to direct costs such as tuition fees and books. It would be fairly straightforward to provide assistance to workers for part of the income foregone if they have to take time off work to take post-secondary education. For example, a worker who took one day off per week to attend courses could be provided with a guaranteed loan for up to, say, 20 per cent of his earnings.

There are several advantages in this type of approach. The Commission of Inquiry on Educational Leave and Productivity (Adams, et. al. 1979) found that programs

of study are not always available at times most convenient to part-time participants. Thus, if part-time students could attend courses during the day, a much larger range of programs would probably open up to them. Employers may also prefer to release individuals on a part-time basis rather than on a full-time basis since this would probably cause less disruption in their workforce. If an employee were to be released for full-time study this would mean that a new employee would have to be recruited to carry out the functions of the person on leave. Part-time release from work can probably be accommodated by the existing workforce, by employing a more junior person or by recruiting a part-time employee to carry out the required work.

Under the scheme, the employee would bear the bulk of the cost of the training or retraining program, although under the Canada-Student Loans Program there is some public subsidy through lower than market interest rates. It would be fairly easy to increase the size of the public subsidy by providing part of the assistance in the form of a grant or by writing off part of the loan on completion of the program. Employers could also be made to bear part of the cost by legislation which could stipulate that part of the income foregone by the employee, should be borne by the employer.

Thus, it appears that part-time study may be a more useful means than full-time study for encouraging the development of skill development leave for post-secondary education at the present time. At the very least, such a scheme requires more careful analysis and estimation of the costs and benefits compared to those of a program based on full-time study.

VII: Conclusions

Three questions were listed in the introduction to this report: Is skill development leave for post-secondary education useful and worthwhile? If leave programs were instituted for post-secondary education, would there be a demand for them? What method of financing should be considered for such programs?

Our analysis suggests that skill development leave is a useful mechanism for reducing some of the manpower imbalances in the economy. Leave programs would allow individuals with skills which are declining in demand, to acquire new skills and to sharpen existing skills to meet the demands of new technology. In this context, skill development leave may be particularly important during the eighties to enable workers to meet the demands of rapidly changing technology.

University graduates appear to be highly flexible in terms of the functions that they can perform. This is not surprising since university education is fairly general, and graduates adapt their skills to different work situations. Skill development leave can provide an opportunity for graduates to develop specific skills related to particular jobs and hence to improve the

matching of manpower demand and supply.

Older individuals prefer part-time to full-time study and, although this is partly due to the relative cost of the two, this suggests that leave programs based on part-time study are more likely to be successful than those based on full-time study. The demand for part-time study has increased dramatically and a large proportion of recent graduates indicate that they intend to take more post-secondary education. Part of this demand is for personal enrichment and cultural reasons, but a significant proportion of individuals want to take more post-secondary education for job-related reasons and career advancement. It follows that skill development leave programs will generate a significant demand for post-secondary education.

Although a Registered Educational Leave Plan will provide significant benefits to highly skilled and professional manpower, it will also allow wealthy individuals who have no intention of taking training or educational upgrading programs, to obtain substantial tax savings. A much better scheme would be to provide financial assistance under the Canada Student Loans Program for part-time study. Employers could be made to bear part of the cost of foregone earnings and the Federal Government could bear part of the cost by providing assistance in the form of a grant

and low-interest loan.

To sum up, our analysis suggests that skill development leave for post-secondary education is worthwhile and necessary to meet the conditions of the eighties. Leave programs should be available for individuals to take specific and job-related training programs on a part-time basis. Individuals on such leave should be paid part of the salary lost while they are on leave, and the Federal Government should provide financial assistance to cover not only direct costs such as books, but also part of the income foregone during training. Such assistance should take the form of a mixture of a grant and a low interest loan.

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